

## **REMARKS**

This is responsive to the Office Action mailed July 14, 2008 ("Office Action").

### **Claim Amendments**

Claims 13, 16, and 22 have been amended to specify that the electrical heating element is a face heater. No new matter is introduced by these amendments.

### **Claim Rejections – 35 U.S.C. §102**

Claims 1-5, 16-20, and 22-24 stand rejected under 35 U.S.C. §102(b) as being anticipated by Yoshizaki et al. (U.S. Patent No. 5,582,805).

Independent claim 1 recites a method for heating a catalyst bed for startup comprising providing a catalyst bed having an upstream face and a downstream face; providing an electrical heating element positioned along one face of the catalyst bed; passing a small flow of reactants through the electrical heating element and catalyst bed; and heating the electrical heating element to initiate an exothermic reaction at the face of the catalyst bed, wherein the heat of reaction propagates throughout the catalyst bed thereby heating the catalyst bed for start-up.

Independent claim 16 recites a method for heating a catalyst bed comprising providing a catalyst bed in communication with an electrical heating element wherein the electrical heating element is a face heater; and heating the electrical heating element so as to maintain the desired temperature of the catalyst bed.

Independent claim 22 recites a method for heating a catalyst bed to a desired temperature, comprising positioning an electrical heating element upstream of the catalyst bed wherein the electrical heating element is a face heater; and passing a fluid across the electrical heating element and through the catalyst bed, wherein the catalyst bed is heated to the desired temperature.

Yoshizaki does not anticipate the methods for heating a catalyst bed of claims 1-5, 16-20, and 22-24 of the present invention. In addition to the arguments previously presented, Applicants respectfully disagree that Yoshizaki discloses "providing an electrical heating element positioned along one face of the catalyst bed." The Yoshizaki "electrical heating element (44/45) along one face (col. 15, lines 4-6)" cited by the Examiner (Office Action, pp. 2 and 5) as depicted in FIG. 15 is a band heater that heats from the outside edge of the catalyst carrier. Heating in this manner will require longer heat up times and greater energy input. In contrast, the face heater as depicted in FIG. 3 of the present invention heats the face of the catalyst bed (Paragraph 0042) and therefore requires less time to heat the catalyst bed for start-up (Paragraph 0005) and correspondingly less energy (Paragraph 0006).

In addition, assuming for the sake of argument that Yoshizaki does disclose all of the elements of claims 1-5, 16-20, and 22-24, it is not enough that Yoshizaki discloses all of the elements in isolation. The Federal Circuit requires that Yoshizaki disclose each element as "arranged in the claim." *Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452 (Fed. Cir. 1984). Yoshizaki does not disclose the elements as arranged in claims 1-5, 16-20, and 22-24.

Because Yoshizaki fails to teach one or more of the recited elements of claims 1-5, 16-20, and 22-24, reconsideration and withdrawal of the rejection of claims 1-5, 16-20, and 22-24 under 35 U.S.C. §102(b) as being anticipated by Yoshizaki is respectfully requested.

Claims 16, 17, and 20 stand rejected under 35 U.S.C. §102(b) as being anticipated by Brunson et al. (U.S. Patent No. 5,512,251).

Independent claim 16 recites a method for heating a catalyst bed comprising providing a catalyst bed in communication with an electrical heating element wherein the electrical heating element is a face heater; and heating the electrical heating element so as to maintain the desired temperature of the catalyst bed. Brunson

does not anticipate a method for heating a catalyst bed comprising: (1) providing a catalyst bed in communication with an electrical heating element wherein the electrical heating element is a face heater and (2) heating the electrical heating element so as to maintain the desired temperature of the catalyst bed.

In addition to the arguments previously presented, Brunson discloses a band heater (col. 5, lines 56-59). Heating in this manner will require longer heat up times and greater energy input. In contrast, the face heater as depicted in FIG. 3 of the present invention heats the face of the catalyst bed (Paragraph 0042) and therefore requires less time to heat the catalyst bed for start-up (Paragraph 0005) and correspondingly less energy (Paragraph 0006).

In addition, assuming for the sake of argument that Brunson does disclose all of the elements of claim 16, it is not enough that Brunson discloses all of the elements of claim 16 in isolation. The Federal Circuit requires that Brunson disclose each element of claim 16 as "arranged in the claim." *Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452 (Fed. Cir. 1984). Brunson does not disclose the elements of claim 16 as arranged in claim 16.

Because Brunson fails to teach one or more of the recited elements of claim 16, reconsideration and withdrawal of the rejection of claims 16, 17, and 20 under 35 U.S.C. §102(b) as being anticipated by Brunson is respectfully requested.

#### **Claim Rejections – 35 U.S.C. §103**

Claims 13-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bayer et al. (U.S. Patent No. 5,562,885) in view of Helmers (U.S. Patent No. 2,443,423).

Independent claim 13 recites a method for heating a catalyst bed, comprising: providing an electrical heating element positioned within a cooling coil located substantially within the catalyst bed wherein the electrical heating element is a face heater; and heating the electrical heating element thereby heating the catalyst bed to a desired temperature.

Independent claim 16 recites a method for heating a catalyst bed comprising providing a catalyst bed in communication with an electrical heating element wherein the electrical heating element is a face heater; and heating the electrical heating element so as to maintain the desired temperature of the catalyst bed.

Independent claim 22 recites a method for heating a catalyst bed to a desired temperature, comprising positioning an electrical heating element upstream of the catalyst bed wherein the electrical heating element is a face heater; and passing a fluid across the electrical heating element and through the catalyst bed, wherein the catalyst bed is heated to the desired temperature.

In addition to the arguments previously presented, Bayer discloses an electrical heating element between stacked sheet-metal layers (col. 7, lines 37-54). Heating in this manner will require longer heat up times and greater energy input. In contrast, the face heater as depicted in FIG. 3 of the present invention heats the face of the catalyst bed (Paragraph 0042) and therefore requires less time to heat the catalyst bed for start-up (Paragraph 0005) and correspondingly less energy (Paragraph 0006).

As a result, claims 13-21 are not unpatentable over Bayer in view of Helmers. Reconsideration and withdrawal of this rejection is respectfully requested.

Amendment  
U.S.S.N. 10/006,875  
Art Unit 1797

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Conclusion

All of the stated grounds of objection and rejection are believed to have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,



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